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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/914,868	08/19/97	BJORNARD	E 07041/106001

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EXAMINER

CHANG, A

ART UNIT

PAPER NUMBER

2872

DATE MAILED:

10/14/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/914,868

Applicant(s)
Bjornard et al

Examiner
Audrey Chang

Group Art Unit
2872



☒ Responsive to communication(s) filed on Mar 19, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-5, 7-15, 17-22, 31-43, 47, and 48 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-5, 7-15, 17-22, 31-43, 47, and 48 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Continued Prosecution Application

1. The request filed on May 14, 1999 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 08/914,868 is acceptable and a CPA has been established. An action on the CPA follows.

Remark

2. This Office Action is in response to applicant's preliminary amendment filed on March 19, 1999 which has been entered as paper number 11.

3. By this amendment, claims 7, 8, 17, 35, 36, 37, 40, 43 and 47 have been amended and claims 44-46 have been canceled by the applicant. Claims 1-5, 7-15, 17-22, 31-43 and 47-48 remain pending in this application.

4. The rejection to claims 7 and 17 under 35 USC 112, second paragraph, set forth in the previous Office Action dated November 16, 1998 is withdrawn in response to applicant's amendment.

5. The indicated allowability of claims 38-39 is withdrawn in view of the newly discovered reference(s) to Okaniwa (PN. 5,667,880). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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7. Claims 3-5, 7-10, 13-15, 17-22, 31-43 and 47-48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "substantially silicon dioxide", the phrase "substantially composed of silicon dioxide" and the phrase "substantially composed of and selected from the group" recited in various claims appear to be vague and indefinite since the specification fails to give a definite limitation as how to interpret the term "substantially composed of".

✓ The phrase "said DC reactively sputtered material" recited in claim 8 appears to be vague and indefinite since it does not have proper antecedent basis from earlier part of the claim. The phrase "at least one other anti-reflection coating layer" recited in claim 8 appears to be indefinite and confusing since it is not clear if this "anti-reflection coating layer" is the same or different from the anti-reflection coating defined in the earlier part of the claim.

✓ The term "tin-doped oxide" recited in claims 43 and 47 appears to be in error since it is not clear what does it mean by such term. The examiner believes this term should be "tin-doped indium oxide" and these claims will be examined in this interpretation.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. Claims 1-3, 5, 8, 11-13, 15, 18, 33-35, 38, 39-40, 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Okaniwa (PN. 5,667,880).

Okaniwa teaches an electroconductive antireflection film that is comprised of a multilayer structure including a first and third layers, with the first layer being the outermost layer, that each is composed of a low refractive index material such as silicon dioxide (index refraction equals 1.46), a second layer that is composed of high refractive index layer having a refractive index ranged between 1.8 to 2.9, and a forth layer (23) that is comprised of electroconductive material such as tin-doped indium oxide (which known in the art as ITO with index refraction equals 1.97). Okaniwa teaches that the second layer may comprised any art recognized high refractive materials having the refractive index in the ranged taught and the electroconductivity of the film may be increased if the second layer is composed of tin-doped indium oxide, (please see Figure 1 columns 4 and 5). Okaniwa also teaches that the multilayer structure is formed by reactively sputtering the layer materials to a substrate layer (11), (please see columns 8-9). Okaniwa teaches that the substrate may include material such as glass with an index refraction of 1.52. It is noted that the index refraction of the layer materials for first and third layer is therefore lower than the refractive index of the substrate and the index refraction for layer material of second and fourth layers is greater than the substrate material. The glass substrate is also obviously temperature sensitive. This reference has met all the limitations of the claims with the exception that it fails to disclose that the substrate material may also assume plastic material. However since both the glass and plastic materials are very well known substrate materials used in the anti-reflective coating art and since the specification fails to teach the criticality of having one particular substrate would overcome any problem presented for the other such modification would therefore have been obvious to one having ordinary skilled in the art since it has been held to select a known

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material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

10. Claims 4, 7, 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Okaniwa as applied to claim 1 above, and further in view of patent issued to Dickey et al (PN. 5,372,874).

The electroconductive anti-reflective film taught by Okaniwa as described for claim 1 above has met all the limitations of the claims. Okaniwa teaches that the reactively sputtered second layer may include high refractive index material having refractive index ranged between 1.8 to 2.9 however this reference does not teach explicitly that the material is tin oxide. But tin oxide, having an index refraction about 2.0, is a very well known layer material that has good DC reactively sputtering rate in the art for making anti-reflective film as demonstrated by the teachings of Dickey et al, (please see column 2). It would therefore have been an obvious modification to one skilled in the art to replace the tin doped indium oxide by tin oxide material since it has been held to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

With regard to claims 7 and 17, Okaniwa does not teach explicitly about the optical thickness of each of the layer of the multilayer anti-reflective film. However it is a well known practice in the art to adjust the optical thickness of each layer may for the purpose of obtaining and designing a desired transmittance/reflectance characteristics for the film. Furthermore, Dickey et al in the same field of endeavor teaches an anti-reflective coating with the multilayered structure that assumes the well known Rock structure that reads on the structural limitations of the claims, (please see Figure 6 and column 6). It would therefore have been obvious to one having ordinary skill in the art to apply the teachings of Dickey et al to modify the

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structure of the anti-reflective film of Okaniwa for the benefit of obtaining desired reflectance/transmittance characteristics.

11. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Okaniwa in view of the patent issued to Dickey et al.

The electroconductive anti-reflective film taught by Okaniwa, with details described for claim 1 above, has met all the limitations of the claim with the exception that it does not disclose the claimed optical thickness for the second layer. However such feature is included in the feature claimed in claims 7 and 17 and it is rejected based on the teachings of Dickey et al for the same reasons stated above.

Allowable Subject Matter

12. Claims 9, 10 and 36-37 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

13. Claims 19-22, 31-32 and 41-42 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

14. Applicant's arguments with respect to claims 1-5, 7-8, 11-15, 17-18, 33-37, 40-43 and 47-48 have been considered but are moot in view of the new ground(s) of rejection.

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15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chang whose telephone number is (703) 305-6208.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Papers related to this application may be submitted to Group 2800 through facsimile transmission. Papers should be faxed to Group 2800 via PTO Fax Center (fax number 703-308-7722) located in Crystal Plaza 4.

A. Chang

October 7, 1999


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